


December 23, 1998

MEMORANDUM

TO: Orville D. Green, Assistant Administrator
Air & Hazardous Waste

FROM: Susan J. Richards, Chief
Air Quality Permitting Bureau
Air & Hazardous Waste 

SUBJECT: Issuance of Revised Tier II Operating Permit (#011-00013) to
Idaho Supreme Potatoes, Incorporated; Firth, Idaho

PROJECT DESCRIPTION

Idaho Supreme Potatoes, Incorporated (Idaho Supreme) requests a modification to their existing Tier II Operating Permit (OP). Emission point sources existing at the facility are as follows: two (2) boilers, two (2) dryers, four (4) process baghouses, and ten (10) storage silo baghouses. Fugitive emission sources found at the facility are space heaters, fuel storage tanks, and paved roads.

DISCUSSION

On July 6, 1998, the Division of Environmental Quality (DEQ) received a letter from Idaho Supreme. The facility requests to change certain requirements within their existing Tier II OP. No public comment will be provided as per IDAPA 16.01.01.404.04.

FEES

Fees apply to this facility in accordance with IDAPA 16.01.01.470. The facility is subject to permit application fees for this revised Tier II OP of \$500.

RECOMMENDATIONS

Based on the review of its existing Tier II OP, information provided by the company, and all applicable state and federal rules and regulations concerning the revision of a Tier II OP, the Bureau recommends that Idaho Supreme Potatoes, Inc., be issued a revised Tier II Operating Permit. The facility has been notified in writing of the required Tier II application fee of five hundred dollars (\$500.00). The permit will be issued upon receipt of the fee.


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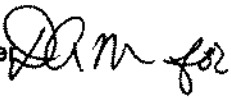
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December 23, 1998

MEMORANDUM

TO: Susan J. Richards, Chief
Air Quality Permitting Bureau
Air and Hazardous Waste

FROM: Robert Baldwin, Air Quality Engineer 
Air Quality Permitting Bureau
Operating Permits Section

THROUGH: Daniel Salgado, Permits Manager 
Air Quality Permitting Bureau
Operating Permits Section

SUBJECT: Technical Analysis for Revision of Tier II Operating Permit (#011-00013)
Idaho Supreme Potatoes, Incorporated (Firth)

PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 16.01.01 Sections 404.04 (Rules for the Control of Air Pollution in Idaho) (Rules) for revision of Tier II Operating Permits (OP).

PROJECT DESCRIPTION

Idaho Supreme Potatoes, Incorporated (Idaho Supreme) requests a modification to their existing Tier II OP (#011-00013). Emission point sources existing at the facility are as follows: two (2) boilers, two (2) dryers, four (4) process baghouses, and ten (10) storage silo baghouses. Fugitive emission sources found at the facility are space heaters, fuel storage tanks, and paved roads.

1. **Emission Sources**

General Plant Description

The Idaho Supreme Potatoes facility is a potato processing facility which dehydrates potatoes to form slices and flakes. The potato by-products are used in dog food and cattle feed. There are three (3) processing lines:

Main Line;
Line C; and
Slice Line

Initially, potatoes are received at the plant on trucks and are unloaded across pilers into temporary storage bins. They are taken as needed from the bins for the process using cold water to transport and wash the potatoes. The potatoes then enter one of the process lines mentioned above. The product produced is bagged and shipped or is stored in the ten (10) product storage silos at the plant site.

The facility utilizes natural gas fuel burning equipment for the generation of process steam, heating, and drying.

Point source emissions from the facility are from fuel burning equipment such as the boilers, space heaters, gas fired dryers, dust from baghouses, and on-site diesel fuel storage. Fugitive particulate emissions are also generated by receiving, transfer of raw potatoes, and from paved roads.

Fuel Burning Equipment - Boilers

Idaho Supreme Potatoes, Inc., has two (2) boilers to supply the facility's steam requirements. The Bigelow boiler retrofitted from coal to natural gas provides the operational steam for the plant. The Cleaver Brooks is used as backup steam sources. The backup boiler MAY be fired a period of two (2) hours per month for testing purposes, but shall not exceed being fired in excess of fifty (50) hours per year.

Emissions from Boilers are uncontrolled. Emissions from the dryers and space heaters are uncontrolled.

Equipment Specification

Boiler #1

Manufacturer:	Bigelow
Maximum Heat Input Capacity:	Approximately 140 MMBTU per hour

Low NO_x Burner

Manufacturer:	Coen
Model No.:	CSI NOXMIXER size 34 (or equivalent)

Boiler #2

Manufacturer:	Cleaver Brooks
Model No.:	WT200X-BR3
Maximum Heat Input Capacity:	43.03 MMBTU per hour

Fuel Burning Equipment - Dryers

The national dryer and secondary dryer are natural gas-fired. The national dryer consists of three sections: Stage A, Stage B, and Stage C. The dryers are used to dehydrate the potatoes to the products desired.

Equipment Specifications

National Dryer

Stage A

Manufacturer:	National
Model No.:	MAXON NP-1
Maximum Heat Input Capacity:	8.0 MMBTU per hour
Burner Type:	Horizontally-Fired

Stage B

Manufacturer:	National
Model No.:	MAXON NP-1
Maximum Heat Input Capacity:	3.20 MMBTU per hour
Burner Type:	Horizontally-Fired

Stage C

Manufacturer:	National
Model No.:	MAXON NP-1
Maximum Heat Input Capacity:	3.2 MMBTU per hour
Burner Type:	Horizontally-Fired

Secondary Dryer

Manufacturer:	Maxon
Model No.:	405 OVENPAK
Maximum Heat Input Capacity:	.55 MMBTU per hour
Burner Type:	Horizontally-Fired

Fuel Burning Equipment - Space Heaters

The industrial space heating units consist of three (3) specific units and an aggregate of several small units.

Equipment Specifications

Industrial Space Heat South

Manufacturer:	Maxon
Model No.:	MAXON NP-1
Maximum Heat Input Capacity:	8.25 MMBTU per hour
Burner Type:	Horizontally-Fired

Industrial Space Heat North

Manufacturer:	Maxon
Model No.:	MAXON NP-1
Maximum Heat Input Capacity:	8.25 MMBTU per hour
Burner Type:	Horizontally-Fired

Industrial Space Heat East

Manufacturer:	Maxon
Model No.:	MAXON NP-1
Maximum Heat Input Capacity:	15.4 MMBTU per hour
Burner Type:	Horizontally-Fired

Industrial Space Heat Aggregate

Manufacturer:	Various
Model No.:	Various
Maximum Heat Input Capacity:	2.06 MMBTU per hour (Combined)
Burner Type:	Horizontally-Fired

Process Dehydration Lines

Initially, potatoes are received at the plant by trucks and are unloaded across pilers into storage bins. They are taken as needed from the bins for processing using cold water for washing and transporting the potatoes. The potatoes are processed into two (2) forms: dry flakes used for instant mashed potatoes or as ingredients in other products, and slice/dice used for au gratin dry boxed potatoes.

The potatoes are held in a surge bin and released at a metered rate for proper slicing. The slices are blanched, dried, inspected, and packaged.

The potatoes used to produce flakes after peeling are riced, forced through slots and broken into smaller pieces like mash, and placed on dehydration rolls. The potato mash is applied on the rollers as a thin sheet. The dried potato sheets are cut off the drum and broken into pieces (flakes). The flakes are milled, inspected, and packaged.

The particulate emissions for the process lines are based on a material balance submitted by the applicant. The material balance was based on the solids of raw product entering the process less the solids of all produces produced, solids in mash, solids in slurry, and solids in land application.

The particulate limit shall not exceed limits stated in Appendix A of the permit.

SUMMARY OF EVENTS

On July 6, 1998, the Division of Environmental Quality (DEQ) received a letter from Idaho Supreme. The facility requests to change certain requirements within their existing Tier II OP.

DISCUSSION

1. Emission Estimates

Emission estimates were provided by Idaho Supreme Potatoes and can be seen in the July 10, 1995, application and in the September 22, 1995, PTC #011-00013. DEQ also estimated the PM, SO₂, NO_x, CO, and the VOC emissions by using emission factors from AP-42, Section 1.4 (natural gas combustion).

The maximum PM emission rate for the facility was based on 1,110 MMcf of natural gas used and the requested fifty (50) ton per year process emission limit requested in the application.

NO_x is the pollutant emitted in the greatest amount from the fuel burning equipment. The maximum emissions rate for that pollutant was estimated, using 8,760 hours for the non permitted equipment, to exceed 100 tons per year for the facility. The applicant chose to avoid Tier I permitting by limiting the potential to emit of NO_x emissions to less than 100 ton/year. The applicant choose to reduce the hours of operation of the standby boiler, the Cleaver Brooks, to fifty (50) hours per year. The applicant accepted an enforceable limit on NO_x emissions of 51.9 tons per year. The facility also has disconnected the Zurn Industries boiler from its energy source and from the plant. The Zurn Industries boiler will remain disconnected through the limit of this permit. The boilers are limited to a fuel consumption of 770,000,000 scf per year as measured by a gas meter. To limit the facility to this amount of NO_x emissions, maximum natural gas usage for the entire facility must be limited to less than 1,110 million cubic feet per year.

Compliance for the gas usage will be demonstrated by reporting the annual gas usage to DEQ on a rolling annual basis.

Fugitive particulate emissions from the paved roads were calculated by the applicant by using emission factors from AP-42, Section 11.2.3.3.

Fugitive NO_x emissions from the space heaters were estimated by using emission factors found in AP-42, Section 1.4-1. Based on applicant's submittal, it was assumed that burners operate 8,760 hours per year.

Fugitive emission calculations can be determined from the application materials.

The emissions for the potato dehydration process were determined from information in the form of a month long material balance. The material balance was based on comparing the dry matter of solids input to dry matter of solids output with the difference assumed to be emitted into the air. The assumed air emission was then prorated to the requested 574,000,000 pound per year clean raw product input to determine if the potential to emit would exceed 100 tons per year. It was found that neither the prorated value nor the requested process emission of fifty (50) tons per year resulted in an emission rate that needed further limitation. Therefore, the fifty (50) tons per year particulate matter was assigned to the entire potato dehydration process.

2. Permit Revisions

1. Permit Cover Page. Change Person to Contact designation from Keith Keller, Technical Services Manager, to Duane Ball, Assistant.
2. Section 1.1 SOURCE DESCRIPTION: Process Description under General Plant Description. This section has been removed from the existing Tier II OP and replaced into the Tech Memo and has been revised as follows:

Initially, potatoes are received at the plant on trucks and are unloaded across pilers into temporary storage bins. They are taken as needed from the bins for the process using cold water to transport and wash the potatoes. The potatoes then enter one of the process lines mentioned above. The product produced is bagged and shipped or is stored in the six (6) ten (10) product storage silos at the plant site.

3. Section 2.1.1 OPERATING REQUIREMENTS: General Operating Requirements under General Plant Description. The existing Tier II OP has been revised as follows:

1.1 General Operating Requirements

- 1.1.1 The total clean raw potatoes processed shall not exceed a rate of 72,338 pounds per hour (lb/hr) or ~~250,000~~ 287,000 tons per year (T/yr), on an annual rolling basis, and per applicant's request.

4. Section 2.1.2 OPERATING REQUIREMENTS: General Operating Requirements under General Plant Description. The existing Tier II OP has been revised as follows:

1.1 General Operating Requirements

- 1.1.2 The total natural gas consumption of all fuel burning equipment shall not exceed ~~4,030~~ 1,110 MMcf per year, on an annual rolling basis, and determined by gas meter readings at the facility, as per applicant's submittal.

5. Section 1.1 SOURCE DESCRIPTION: Process Description under Fuel Burning Equipment - Boilers. This section has been removed from the existing Tier II OP and replaced into the Tech Memo and has been revised as follows:

Idaho Supreme Potatoes, Inc., has ~~three (3)~~ two (2) boilers to supply the facility's steam requirements. The Bigelow boiler retrofitted from coal to natural gas provides the operational steam for the plant. The Cleaver Brooks is used as backup steam sources. The backup boiler ~~are to~~ MAY be fired a period of two (2) hours per month for testing purposes, but shall not exceed being fired in excess of fifty (50) hours per year.

6. Section 1.3.3 SOURCE DESCRIPTION: Equipment Specification: Boiler #3 under Fuel Burning Equipment - Boilers. This condition was moved to Section 2, OPERATING REQUIREMENTS. The existing Tier II OP has been revised as follows:

2.1 Fuel Throughput

2.1.4 Boiler #3

Boiler #3 is disconnected for its energy source and from the plant's steam lines. Boiler #3 shall remain disconnected for the duration of this permit.

7. Section 3.1.1 OPERATING REQUIREMENTS: Fuel Throughput: Boiler #1 Natural Gas under Fuel Burning Equipment - Boilers. The existing Tier II OP has been revised as follows:

2.1 Fuel Throughput

2.1.1 Boiler #1 Natural Gas

The maximum ~~steam production from combustion of natural gas shall not exceed 459,570,000 pounds per quarter or 638,266,000 pounds~~ fuel usage for the boilers shall not exceed 770 MMcf per year on an annual rolling basis.

8. Section 3.1.4 OPERATING REQUIREMENTS: Fuel Throughput: Boiler #2: Yearly Operation under Fuel Burning Equipment - Boilers. The existing Tier II OP has been revised as follows:

2.1 Fuel Throughput

2.1.3 Boiler #2: Yearly Operation

The Permittee shall ~~operate~~ not operate the boilers Cleaver Brooks boiler for a period not to exceed fifty (50) hours per calendar year including the monthly testing: year.

9. Section 1.1 SOURCE DESCRIPTION: Process Description under Fuel Burning Equipment - Dryers. This section has been removed from the existing Tier II OP and replaced into the Tech Memo and has been revised as follows:

~~The Stage A, Stage B, Stage C, and secondary dryers. The national dryer and secondary dryer are natural gas-fired. The national dryer consists of three sections: Stage A, Stage B, and Stage C. These dryers are used to dehydrate the potatoes to the products desired.~~

10. Section 3.1.1 OPERATING REQUIREMENTS: Operating Hours: Yearly Operation under Fuel Burning Equipment - Dryers. The existing Tier II OP has been revised as follows:

2.1 Operating Hours

2.1.1 Yearly Operation

~~The Permittee shall operate the dryer for a period not to exceed 6,942 7,920 hours per year on an annual rolling basis.~~

11. Section 4.1 MONITORING REQUIREMENTS: Operation Parameters Monitoring under Fuel Burning Equipment - Space Heaters. The existing Tier II OP has been revised as follows:

2.1 Operation Parameters Monitoring

~~The Permittee shall record the following parameters in a quarterly log to verify compliance with Section 3.1 of this permit. The log shall be kept at the facility for a minimum period of two (2) years and shall be made available to Department representatives upon request. No monitoring is required.~~

12. Section 2.1.1 EMISSION LIMITS: Operational Limit under Process Dehydration Lines. This section has been removed from the existing Tier II OP and replaced into the Tech Memo and has been revised as follows:

~~The particulate limit is based on an annual maximum throughput of 500,000,000 pounds of raw potatoes processed each year. Based on the material balance of solids, the distribution of product will be as follows: 63.25% flakes; 5.74% slices; 0.44% flake dog food; 0.39% pulps; 0.16% dry dog food; 2.95% mash; 0.14% slurry; 18.92% waste to field; 0.94% air emissions. The particulate matter limit is based on the requested limit in the permit application. This limit is listed in Appendix A. shall not exceed limits stated in Appendix A of the permit.~~

13. Section 3.1.1 OPERATING REQUIREMENTS: Operating Hours: Yearly Operation under Process Dehydration Lines. The existing Tier II OP has been revised as follows:

2.1 Operating Hours

2.1.1. Yearly Operation

~~The Permittee shall operate the process lines for a period not to exceed 6,942 7,920 hours per year on an annual rolling basis.~~

14. All SOURCE DESCRIPTION sections per facility source were removed from the permit and replaced into the technical analysis memo.

FEES

Fees apply to this facility in accordance with IDAPA 16.01.01.470. The facility is subject to permit application fee for the Tier II permit of five hundred dollars (\$500.00).

RECOMMENDATIONS

Based on the review of its existing Tier II OP, information provided by the company, and all applicable state and federal rules and regulations concerning the revision of a Tier II OP, the Bureau recommends that Idaho Supreme Potatoes, Inc., be issued a revised Tier II Operating Permit. No public comment will be provided as per IDAPA 16.01.01.404.04. The facility has been notified in writing of the required Tier II application fee of five hundred dollars (\$500.00). The permit will be issued upon receipt of the fee.

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cc: Pocatello Regional Office
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